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**Abstract****Respiration Monitor**

5       A respiration monitor comprises a transducer array  
5 having a plurality of individual transducer elements 7  
that span at least part of the region of diaphragm.  
movement of a patient. A patient 1 having a lung 2 and  
an abdomen 3 being separated therefrom by a diaphragm 4  
10      is fitted with an ultrasound transducer array 5 over the  
lung sinus 6 prior to being given a CT or MRI scan. Each  
individual transducer element 6 emits an ultrasound  
pulse and then detects its echo in the known manner.  
Because air has a much higher acoustic impedance than  
15      tissue, the reflection of the ultrasound beam is much  
more pronounced when the lung is insonated.

By measuring the strength of the receiving signal,  
it is possible to determine to a high degree of accuracy  
the position of the patient's diaphragm.